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a digest of timely information

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Absorption of Salicylates: This article represents the second in a series of reports concerning the investigations conducted by the Rheumatic Fever

Service of the U. S. Naval Hospital, Corona, California. The first of these articles appeared in the Bumed News Letter of February 2, 1945.

Although the administration of salicylates induces striking symptomatic relief in patients with rheumatic fever, especially in the presence of polyarthritis, the question of a more profound therapeutic action is debatable. It has recently been suggested by Coburn that while small doses produce symptomatic relief only, large doses may have an actual curative effect. This paper is concerned with the technic of therapeutic measures used to attain a salicylate level in plasma or serum of from 20 to 30 mgm. per cent or higher, a level which Coburn has considered to be critical.

Studies have been made of salicylate concentrations in the serum following oral, rectal and intravenous administration of sodium salicylate and of acetyl salicylate; the effect of concomitant administration of sodium bicarbonate; differences in serum salicylate levels among groups supposedly receiving the same dosage, and the reasons for these variations. The subjects included patients with rheumatic fever and a number of normal volunteers. Oral salicylate and bicarbonate were given in tablet form. In view of an unfortunate experience at another activity, enteric-coated tablets were not used. Sodium salicylate was given intravenously in 10 per cent solution. The drug was given rectally in a solution of 50 grains (3.3 Gm.) of sodium salicylate in 30 cc. of water, care being taken that the solution was retained at least two hours. The method outlined by Brodie, Udenfriend and Coburn was used for the determination of serum salicylates.

Serum salicylate levels were done on normal volunteers at various intervals after ingestion of a single dose of 50 grains (3.3 Gm.). Levels of 19 mgm. per cent were quickly and readily obtained. In many instances there was considerable circulating salicylate at fifteen minutes. The height of the curve did not appear significantly modified by the concomitant administration of 50 grains (3.3 Gm.) of sodium bicarbonate. In all instances blood levels were zero at 48 hours. Corresponding figures were attained following administration of 30 grains (2 Gm.) of sodium salicylate intravenously. When administered without bicarbonate, acetyl salicylate was evidently absorbed more slowly than was sodium salicylate.

In marked contrast were the results of administration of the drug by rectum. Three patients with rheumatic fever who had not received salicylates for three days were each given 50 grains (3.3 Gm.) of sodium salicylate by rectum immediately after the withdrawal of a control blood specimen. This dosage was repeated three times at four-hour intervals so that a total of 200 grains (13.2 Gm.) was given by rectum during the day. However, the serum salicylate level did not rise above 7 mgm. per cent. Salicylates were discontinued for three days and then were resumed by mouth as aspirin in a daily dosage of 100 grains (6.6 Gm.), accompanied by 100 grains (6.6 Gm.) of bicarbonate. On this oral dosage these men attained serum salicylate levels of from 16 to 20 mgm. per cent.

In studies on rheumatic subjects it was evident that the salicylate level, if moderately high before the test dose, could be raised only slightly by oral or intravenous administration. The persistently low levels shown by a few of the subjects were not explained.

The effect of the drug on the cerebration of normal subjects was of some interest and importance. The symptoms experienced by one subject were typical; nausea, lightheadedness, garrulity and irresponsibility were quite comparable to those which follow ingestion of alcohol, although the elation characteristic of the latter drug was absent. As one of the subjects observed, a salicylate jag is quite a melancholy affair. Dizziness often occurred shortly after administration of the drug,and was most conspicuous when the rise in serum salicylate was abrupt. It was usually absent at two hours, even when the serum salicylate level was maximal.

It was evident that large doses of salicylate were not pleasant to take and that they induced a state of irresponsibility. In one study there was reason to believe that cooperation in taking the drug was good until the fourth week, when some of the group began to show irregularities. The assumption that medication prescribed is synonymous with medication taken is particularly unreliable with salicylate on account of its gastric and cerebral side effects. Such effects would probably be more conspicuous in subacutely ill patients than in the febrile, toxic patients described by Coburn. On the whole it seems evident that most of the men took their medication in a commendably conscientious manner. The problem of those who did not take it is one for sober clinical consideration, not for invective. It is well to mention that therapeutic failures occurred alike among those with consistently high blood levels as well as those with irregularities suggestive of irresponsibility in taking the medication.

Observations on carefully supervised patients who were taking 150 grains (10 Gm.) of sodium salicylate daily suggested that the daily administration of 60 grains (4 Gm.) of sodium bicarbonate did not affect the serum salicylate level. Two of the patients given 150 grains (10 Gm.) of sodium bicarbonate likewise showed no change. Possibly a more extended trial with this dosage would have shown changes similar to those recorded by Smull. However, in order to duplicate her technic we should have had to resort to enteric coating of salicylate tablets. In practical salicylate administration we see no reason for giving more than 60 grains (4 Gm.) of sodium bicarbonate daily.

Our observations show salicylate to be readily absorbed from the upper gastrointestinal tract and poorly absorbed from the lower. Thus, we believe that salicylate should not be given in enteric-coated tablets or by rectum. With administration of ordinary tablets by mouth, gastric irritation can be minimized by simultaneous administration of food or bicarbonate. Bicarbonate

sufficient to minimize gastric irritation did not, in our experience, cause a definite reduction in serum salicylate level. Since clinical acidosis has been extremely rare among our patients on salicylate, we feel that daily dosage of bicarbonate need not exceed 60 grains (4 Gm.). Salicylate levels have been well maintained on such a regimen.

It was not necessary to resort to frequent intravenous administration of salicylate. Certain considerations against this procedure are more pertinent to this study than to that of Coburn. A typical relapse was characterized not by high fever with polyarthritis but by low grade fever with cardiac failure. That it is undesirable to give large infusions to patients with cardiac failure is generally recognized. Concentrated salicylate solutions have a marked sclerosing action. Absorption from the gastrointestinal tract is prompt, and there has been no difficulty in maintaining a suitable serum level with oral administration if the drug is actually swallowed. Severe congestive failure also has some effect on gastrointestinal absorption.

It is of interest, however, that in a patient with reticulo-endothelial leukemia whose recurrent polyarthritis was clinically indistinguishable from that of severe rheumatic fever, relief was said to be much more striking when salicylate was given intravenously than when it was given orally. One can only speculate as to the reasons for this. As already noted, certain toxic manifestations seem to be associated with a sharp rise in serum salicylate level rather than with its maintenance. Possibly a similar relationship might hold with certain analgesic and anti-pyretic effects. The possibility that gastrointestinal absorption might produce pharmacologically important changes not detectable in the determination of serum salicylate level cannot, of course, be denied.

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The medical officers participating in this research at Corona were: Lt. Comdr. R. W. Huntington, Jr.,(MC), USNR; Lt. (jg) Rosalie D. Ryan, H (W), USNR; Lt. Comdr. H. R. Butt, (MC), USNR; Lt. Comdr. G. C. Griffith, (MC), USNR; Lt. Comdr. H. Montgomery, (MC), USNR; Comdr. R. F. Solley, (MC), USNR; and Capt. W. H. Leake, (MC), USNR.

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The Use and Abuse of Nasal Vasoconstrictor Medications: No class of drugs is more widely distributed and used than are nasal vasoconstrictor medications. Tabulation reveals that there are at least 240 nasal vasoconstrictor preparations dispensed in the form of drops, sprays, inhalants and ointments. It is timely to question whether the use of this form of therapy is

justifiable and whether there are not disadvantages inherent in this form of medication which demands a reappraisal of the indications for its use.

The primary vasoconstricting effect of sympathomimetic drugs is usually followed by secondary vasodilatation. This secondary vasodilatation is influenced mainly by the type and amount of the drug employed and the sensitivity of the individual vasomotor mechanism.

The addition of antiseptics and particularly the addition of a sulfonamide to vasoconstrictor drugs, increase the irritant properties without compensatory therapeutic benefits.

Judicious use of vasoconstrictive medications is indicated in surgical, manipulative and displacement therapeutic procedures and in some acute nasal infections, notably acute sinusitis.

The indiscriminate use of this form of medication in acute rhinitis lengthens the course of infection and increases the incidence of sinus and otitic complications. Vasoconstrictor drugs may of themselves produce a vasomotor rhinitis indistinguishable from that due to allergy. Vasomotor rhinitis, allergic in origin, is made more severe by constricting medication. The use of vasoconstrictor drugs in chronic obstructive pathologic conditions adds the factor of secondary congestion to the obstruction already present. (J.A.M.A., Feb. 10, '45 - Kully)

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Regeneration and Functional Recovery of Nerves in Infected Wounds: Infection at the site of repair of a severed peripheral nerve increases the formation of adhesions between the suture line, the graft and the surrounding tissues. It activates the mesodermal proliferation of the epineurium and of the perineurium and produces acute inflammatory reactions within these tissues comparable to an acute and, later, to a chronic perineuritis. The perineurium and the epineurium act as a barrier to infection and inflammation and at no time does the infectious process penetrate the nerve fascicles.

There are no essential differences in the sequence, the rate and the extent of functional recovery between nerves repaired in a septic field and nerves repaired under aseptic conditions. Motor, sensory and trophic recovery of the repaired nerve and response to direct electrical stimulation are as good following end-to-end suture performed in a septic field as in a sterile field.

For practical purposes a peripheral nerve injury should be repaired as early as possible in spite of varying degrees of potential infection in the wound. (OEMcmr-88 - Pollick et al, Northwestern Univ. - CMR Bulletin #43)

Combined Use of Fibrin Film and Clot in Union of Nerves: Singer has described a method of uniting nerve segments without the use of thread sutures. The technic, designated as the fibrin adhesive method, involves the use of a thin, smooth film of fibrin prepared from products of fractionation of human blood plasma. The film is impregnated with thrombin, surfaced with fibrinogen and is then applied to the apposed nerve stumps by one of several methods. As it clots, the fibrinogen binds the film to the surface of the nerve and thus serves to transmit the stress caused by retraction of the nerve stumps to the film. In addition to maintaining apposition of the stumps, the film serves as an envelope enclosing the nerve stumps and nerve wound in a continuous channel. This method of nerve splicing is simple in application and no extraneous materials or obstacles to growth are introduced into the nerve trunks or between the stumps. The film is transparent and consequently allows continued observation of the nerve stumps throughout the operation. (J. Neurosurg., March '45)

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Protein Metabolism during Convalescence after Trauma: Our present state of knowledge leaves many problems yet unsolved concerning physiological processes during the period of great wastage of nitrogen which occurs when the organism consumes large portions of its vital tissue constituents in an effort to repair itself or to defend itself against injury.

The average loss of nitrogen in a group of patients with fractures, observed by Howard and his associates, was 225 Gm. In terms of protein this amounts to more than 1,400 Gm., and in terms of muscle protoplasm, approximately 15 pounds (7 Kg.). The average duration of the phase of negative nitrogen balance was thirty-five days. The average maximal loss of nitrogen was not reached until six and six-tenths days after the fracture occurred; the delay in reaching the peak of intensity was not due to slowed excretion of nitrogenous end products of protein catabolism, for the concentration of non-protein nitrogen did not rise appreciably in the blood. After nitrogen balance was reached (on an average of thirty-five days after the fracture was sustained), recovery of lost nitrogen was slow; in the succeeding month or more the patients, lying in bed in casts, regained but a small percentage of the nitrogen which they had lost during the phase of negative nitrogen balance.

Operative cases (femoral osteotomy) were studied in a similar manner. The same pattern of nitrogen metabolism was shown qualitatively, but there was a much shorter phase of nitrogen loss (an average of only nine days). The losses of nitrogen were much smaller, averaging but 45 Gm., and in the subsequent periods these losses were rapidly restored.

Various investigators have observed this metabolic change in patients following burns, and in patients with a variety of types of infection including meningitis, atypical pneumonia, empyema and induced malaria.

The known facts regarding this fundamental pattern of increased destruction of protein may be summarized as follows:

1. The nitrogen deficit is accompanied by increased excretion of nitrogen in the urine. It has repeatedly been shown that, unless complicating gastrointestinal lesions occur, there is no more than a normal amount of nitrogen in the stools; hence, the reaction does not involve an abnormality in the intestinal absorptive mechanism.

2. Urinary nitrogen is mostly in the form of urea. Normally, urea (plus ammonia) constitutes from 80 to 90 per cent of the urinary nitrogen; in the situation under consideration, when as much as 40 or 50 Gm. of nitrogen was excreted per day in the urine, urea and ammonia accounted for 85 per cent or more of the nitrogen. Excretion of creatinine was unchanged, excretion of creatine was slightly increased in patients with fractures, as might be expected, and excretion of uric acid was only slightly greater than normal. One might conclude from this observation that disposition of the nitrogenous portion of catabolized protein after trauma follows the same pattern as in health.

3. Fever per se does not account for the reaction. Many of these patients with fractures did not have fever. Patients with malaria excreted far more nitrogen than could be accounted for by a 7 per cent increase in total metabolism for each degree of elevation of temperature. Furthermore, certain patients may have fever of considerable magnitude and yet not exhibit any increase in protein metabolism.

4. Sulfonamide drugs had no effect either in altering the degree of the protein catabolism or in bringing about any change in the absorption of foodstuffs. In their capacity to reduce the manifestations of infection, sulfonamide drugs would probably have the effect of reducing the degree of protein catabolism.

5. Atrophy of disuse accounts for only a small part of nitrogen loss. Patients immobilized in casts after osteotomy were subjected to exactly the same "disuse" as were those with fractures; yet the quantitative aspects of the picture of protein metabolism were very different in the two groups.

6. Protein metabolism in healthy, vigorous patients after trauma differs from that of simple starvation. In starvation, protein stores are called on, presumably to furnish fuel and other metabolic needs of the organism. After a brief initial period of starvation, during which glycogen stores are utilized and but little nitrogen is lost, there is a steady loss of nitrogen, amounting to about 10 Gm. per day in an average-sized man. This loss of nitrogen can be appreciably reduced by feeding carbohydrate, and can be quickly stopped by giving a diet which provides adequate calories and protein. But it has been

found that in healthy persons after trauma, high caloric diets, with large quantities of protein, often do not appreciably spare the body nitrogen at the height of a vigorous protein catabolic reaction, whether the protein is administered orally as highly nutritious food, or intravenously as amino acids. There is certainly some nitrogen-sparing effect of such therapy during mild reactions and during the periods of waxing and waning of the vigorous reactions; yet the effect is strikingly different in degree from the reversal of loss of nitrogen obtained with similar therapy in cases of simple starvation. Plasma protein, however, does seem to act as an efficient nitrogen-sparing agent in cases so far studied, even with vigorous protein catabolism. This fact should be taken into account in any theoretical consideration of the mechanism of the reaction.

Another way in which the protein catabolic reaction after trauma differs from that due to starvation is in the behavior of potassium. In starvation, after the initial large output of potassium which presumably accompanies utilization of glycogen, the losses of nitrogen and potassium remain constant, at a ratio of approximately 10:1, which is the proportion in which these substances occur in muscle protoplasm. However, during vigorous protein catabolism after fracture, when the patient is adequately fed, there has been observed no coincidental loss of potassium but often a positive potassium balance, even during the periods of greatest loss of nitrogen.

7. All patients do not react alike to what is apparently the same stimulus. Considerable variation was observed in the magnitude of loss of nitrogen in our studies on fracture. In an emaciated patient, the nitrogen balance was maintained even on a low intake of protein. Peters, likewise, found that nitrogen equilibrium could be maintained with comparative ease in some patients suffering from acute infection, although most patients had large losses of nitrogen which could not be prevented by a high protein diet. Browne pointed out that after a long chronic illness it was a simple matter to maintain nitrogen equilibrium even when the patient continued to have fever; in fact strong positive nitrogen balances were effected in his chronically ill patients with diets high in calories and protein. Co Tui maintained nitrogen equilibrium, and even positive nitrogen balance, in his patients with chronic gastric lesions after extensive surgical procedures. The patients with malaria observed by Howard and Bigham seemingly responded to early chills with more vigorous protein catabolism than to later chills of apparently similar severity. Cuthbertson found that rats previously starved of protein did not lose nitrogen after sustaining fractures while normally-fed rats invariably did lose nitrogen. From these observations it must be concluded that the capacity to respond to trauma with increased breakdown of protein is a variable factor, being great in some subjects and reduced or practically absent in others.

Judging from the magnitude of the nitrogen losses under consideration in this discussion, the main source of the lost nitrogen must be the protein of

the tissue cells. Some cells have doubtless furnished proportionately much more nitrogen than others. In all likelihood the same "available" nitrogen stores are called on and sacrificed in this reaction as were used to replenish plasma protein when this element was constantly removed from dogs in the classic experiment of Whipple and Madden.

It would appear that a person is better off before his nitrogen stores have been wasted than after. Surgeons have long noted that chronically debilitated patients are poor operative risks. Mulholland and associates reported that their patients with depleted stores of protein experienced quick healing of decubitus ulcers when they were given large amounts of amino acids. Patients with burns respond much better to skin grafting after their nitrogen stores have been repleted. The dogs used in the experiment of Whipple and Madden which were depleted of protein were poorly resistant to all sorts of injurious agents, as compared with normal dogs. In the case of susceptibility of liver to chloroform poisoning, the most important deficient factor proved to be methionine, and replacement of this single element restored hepatic resistance to normal. Future experimentation may reveal specific defects of this or other amino acids in other instances of increased susceptibility to toxic agents. It may be that in protein catabolism following injury, the organism is really seeking an excess of one or more specific amino acids. Administration of amino acids, individually and in groups, and study of excretion of specific amino acids during the post-traumatic state (as is being carried out on normal persons by Holt and Albanese) may provide the answer to this question. It appears that, other things being equal, full nitrogen stores are a valuable asset to the resistance of the organism, and that prevention of depletion of such stores and repletion of them if lost are worthy of therapeutic efforts.

When time is not at a premium, the refilling of protein stores should render the protein-depleted patient a better surgical risk. During convalescence, repletion of lost protein should also improve his status. Since it is usually easiest to achieve a positive nitrogen balance in persons who have lost large amounts of body protein, administration to such patients of high protein diets before operation, and as soon afterward as is practicable, is clearly indicated. When oral ingestion of a high protein diet is impossible, as in patients with gastrointestinal disease, amino acids or plasma proteins may be administered intravenously with considerable benefit. (Arch. Surg., March '45 - Howard)

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Method of Administration and Effectiveness of Penicillin in Ocular Infections: Experimental staphylococcal and pneumococcal infections of the vitreous of rabbits' eyes responded well to intravitreal injection of from 10 to 100 units of penicillin up to 12 hours after initiation of the infection. There was no response to subconjunctival injection of 250 units. Two of three patients

with traumatic endophthalmitis involving the vitreous responded well to intravitreal administration of penicillin.

In a study of the penetration of penicillin into the anterior segment of the eye, comparison of subconjunctival injection, iontophoresis and cotton pack using a penicillin solution containing 5,000 Oxford units per cc., showed that the highest concentration was obtained in the aqueous by iontophoresis and in the cornea and iris with ciliary body by the prolonged application of cotton packs. The lowest concentration of penicillin in the aqueous, cornea and iris with ciliary body was observed after subconjunctival injection.

Extremely high concentrations of penicillin were demonstrated in the cornea and iris with ciliary body after the application of cotton packs soaked with a penicillin solution containing 20,000 Oxford units per cc. The penicillin content of the aqueous was also higher than that obtained with other methods tested. (Ms. for publication. - von Sallmann, Columbia, Univ. - CMR Bulletin #38)

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Frozen Dried Cornea in Corneal Transplantation: Frozen, dried corneal tissue, prepared by the method used by Weiss for preserving nerve segments, has been used for keratoplasty in 30 normal rabbits. The results indicate that tissue prepared in this way can be transplanted to normal rabbit eyes without unusual reaction. However, of the 22 transplants which were successful, none was transparent after 3 months. It is possible that transparent transplants may be accomplished by use of this material when certain factors have been corrected. (OEMcmr-525 - Adler, Univ. of Pa. - CMR Bulletin #42)

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Nasal Staphylococci and Wound Infection: Staphylococci can be isolated from the nasal cavity and the skin of healthy human subjects with amazing frequency. Miles and his associates have demonstrated that the nasal carrier rate for Staphylococcus aureus, in a group under observation, fluctuated between 19 and 65 per cent during the period from October 1942 to July 1943. These investigators also demonstrated that from 70 to 75 per cent of the patients found to be carriers on a given date would be carrying the organism at the time of wounding. It appeared probable that a subject might contaminate his wound with nasal staphylococci at least during the fourteen days prior to the date of examination and for at least fourteen days after that date. The carrier state and non-carrier state appear to be more or less persistent phenomena. It has been demonstrated that there is a relationship between the presence of staphylococci on the skin and in the nose; although only 24.7 per cent of nasal carriers were also skin carriers, the percentage of skin carriers among those not carrying staphylococci in the nose was only 12.7.

In a limited study of 16 cases the authors found by typing the staphylococci with bacteriophage that in 15 persons the strains from nose and skin were identical and in only 1 were they dissimilar. Gillespie and his associates demonstrated a similar degree of association and showed that in a number of their cases the strains from the nose and skin were of the same serological type. The greater incidence of nasal carriers and the greater profusion of staphylococci found in the noses of carriers as compared with that on the skin of the wrist, suggest that the nose is the primary source of the cocci found on the hand.

The course of wounds on the hands of patients whose carrier state was determined on the day of wounding, suggested to the authors a relationship between the presence of the organism on the wrist of one hand and early staphylococcal contamination of a wound on the other. This supposition finds some support in the fact that in a limited study of 18 patients similar phage types of the organism were found in the wound and on the skin of 13 patients, while in 5 they were dissimilar.

Self-infection of wounds, therefore, while probably not as important or prevalent as cross-infection of wounds, appears from this study to be a definite factor requiring special preventive measures in medical and surgical wards. (J.A.M.A., May 26, '45 - Ed.)

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Infected Wounds and Burns

Soft-Part Wounds: In reviewing a series of soft-part wounds, the following general statements seem permissible. Almost every case of serious infection in soft-part wounds resulted either from faulty surgical technic or error in judgment. The local use of the sulfonamides, particularly sulfadiazine and sulfathiazole, in wounds which were closed, generally resulted in increased wound exudate and some interference in wound healing. The local use of powdered sulfonamide on superficial wounds with a loss of substance was found to interfere with wound healing by granulation and epithelization. Penetrating wounds of the chest caused by knives or bullets seldom require extensive debridement and do not permit the local application of antibacterial agents. Penetrating wounds of the abdomen should always be explored because of the likelihood of injury to the intestinal tract, liver or spleen. Tendon injuries did not heal as satisfactorily or give as good a result in the rate of restoration of function when sulfonamides were used locally as they did in the controls. Stab wounds are not suitable for the appraisal of the local application of antibacterial agents because they are usually fairly clean with relatively little damage to the tissue. Extensive debridement is seldom necessary, and it is almost impossible to apply drugs locally.

Compound Fractures: Factors which favor wound infection in compound fractures are tissue damage, gross contamination, size of wound, incomplete debridement, late operation, shock and bacterial contamination. The occurrence of pathogenic bacteria found in the debrided tissue in compound fractures is of major importance as an indication of development of infection, and serious infections occurred just twice as often as trivial infections when these organisms were found primarily. Primary contamination as indicated by the cultures of the debrided tissue is important, but in wounds which are left open or are only partially closed, the secondary contaminants may gain a foothold and take part in serious infections. Effort should be made to minimize secondary contamination of open wounds by infrequent dressings and by the strict use of masks and gloves during dressings. It is felt by some observers that even when late infection develops and the organisms producing those infections are of a species not found in the original culture from the debrided tissue, in most instances they were primary contaminants. Other observers, however, believe that secondary contamination is a major factor in the development of some of these infections, a view that is prevalent in England and in Canada, but which is difficult to prove.

The high incidence of infection in cases which are plated runs parallel to the figures for the whole group. It is impossible to determine whether this is due to the added trauma of plating or whether this group as a whole represents cases which are more likely to become infected. Clinicians who favor the use of plates in compound fractures, believe that the advantage of immobilization obtained by this procedure outweighs the disadvantage of trauma to the muscles necessary in the application of the plate. They feel that the plate, therefore, not only favors early bony union, but actually minimizes the development of infection. This problem is being studied further.

Burns: In reviewing the burn cases as a whole, the following general statements seem pertinent. Dead skin in full-thickness burns frequently separates much more quickly than does the slough in second degree burns. A patient with a second degree burn of comparatively small extent may die from burn of the bronchial tree not suspected on admission. Such internal burns should always be kept in mind. Late deaths from burns without serious infection suggest strongly the development of a toxin not yet identified. Autopsies frequently are disappointing. The internal administration of sulfonamides to burned patients should await a determination of the blood level in cases treated locally with sulfonamide. B. proteus and Ps. aeruginosa (pyocyaneus) are frequently the cause of chronic infection in the late stages of burns. It may be possible to develop an antibacterial agent or a combination of antibacterial agents which may be used at the primary dressing and at subsequent dressings to minimize the activity of all of the contaminating organisms. The Bradford frame may be of great service in the care of a burn. (F. L. Meleney, Final Report, Infected Wounds and Burns Report No. 53, March 30, '45)

Prophylaxis and Treatment of Experimental Syphilis: Solutions of phenyl arsenoxides in propylene glycol, when applied to the inoculated skin of rabbits, are known to prevent syphilitic infection. They are also effective in soap solutions, but are less active in fatty base and aqueous base ointments.

Preliminary experiments indicate that delayed absorption of penicillin resulting from its incorporation in peanut oil and beeswax permits a marked reduction in the number of injections without loss of therapeutic efficacy in treating syphilis in rabbits. Mapharsen and penicillin seem to be synergistic when used together in the treatment of experimental syphilis. The therapeutic activity of penicillin administered over a period of 30 hours is markedly enhanced by a 10-hour bout of fever during the penicillin treatment. (OEMcmr-215 - Eagle, Johns Hopkins Univ. - CMR Bulletin #42)

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Tubing for Intravenous Therapy: Continuous or repeated intravenous therapy is often complicated by trauma and thrombosis to the extent that all available superficial veins become inaccessible. The discomfort of numerous venipunctures may also become a serious problem, particularly in uncooperative or disoriented patients. Recent experimental work aimed at overcoming these difficulties has resulted in the development of a flexible plastic tubing which can be inserted into the vein through a needle and left in place as long as is required. This method has been used extensively on dogs in which the leg veins, external jugulars and portal vein have been employed for continuous and intermittent infusions. The tubes have remained in the external jugular vein for from four to five weeks without untoward developments. In four dogs which were sacrificed for post-mortem study, the veins were thrombosed around the tube in two, while in the remaining two the veins remained patent. Whether thrombosis was related to the mere presence of the catheter or to the effect of the irritating solution which was introduced daily has not been determined.

In this method a 15-gauge needle is employed for venipuncture and the flexible tubing is then threaded through the needle into the vein for a distance of from 5 to 6 cm. The needle is removed over the tube, the latter being held in place by pressure with the fingers over the vein. The point of entrance is covered with collodion, and the free portion of the tubing is secured to the skin with adhesive tape. A 20-gauge needle, the bevelled point of which has been ground off, provides a suitable adapter for connecting the end of the tube to the intravenous apparatus. When not in use, the cannula is plugged with a large sterile pin. The plastic material tolerates boiling or sterilization with 70 per cent alcohol.

Such cannulae have been used in patients for continuous intravenous penicillin therapy, for the infusion of glucose and saline solutions and for a mixture

of 10 per cent glucose, amino acids and vitamins. The cannulae have been left in place for 12 days, and it should be possible, with proper care, to keep them in for much longer periods. There is no tendency for the tubes to become plugged even when they are not used for several days. Although the method appears to be of definite value in selected cases, further investigation regarding both technic and also materials must be completed before its general clinical use can be recommended safely. (Science, June 1, '45 - Zimmermann)

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Increased Demand for Vitamins during Healing of Wounds: The metabolism of water-soluble vitamins (ascorbic acid, riboflavin, nicotinamide and thiamine) has been investigated in thirty patients with burns, in five patients with traumatic injuries, and in one case of acute hemorrhage treated by subtotal gastrectomy. This study suggests that there is a markedly increased demand (as indicated by low excretion values) for these vitamins immediately following injury and that this demand continues until healing is complete. The possible effects of meeting or not meeting these requirements are being investigated. (OEMcmr-263 - Lund, Harvard Univ. - CMR Bulletin #42)

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Effect of Pressure Changes on the Teeth: Toothache is one of the significant but corrigible indispositions experienced by man when exposed to changes in barometric pressure. The dental services at various AAF installations have made, and are continuing to make, clinical studies of this problem. As a typical example, 202 of over 12,000 subjects (1.6 per cent) who engaged in flights in the decompression chamber at the Las Vegas Army Air Field Gunnery School, Las Vegas, Nevada, have reported toothache.

The onset of toothache usually occurs at an altitude of from 5,000 to 15,000 feet, but pain referable to a given tooth in a given individual often may show remarkable constancy in the altitude at which it first becomes manifest. The pain may become more severe as altitude is increased. Descent almost invariably brings relief, the toothache often disappearing at the altitude at which it was first observed.

Apart from the comparatively rare pain in the teeth or jaw which may be related to the possible effect of aeroembolism on the nerves supplying those regions, toothache may be due only to changes experienced in pressure during ascent or descent. Pain during ascent is more frequent than during descent. Such changes do not affect normal teeth. Common sources of aerodontalgia are mechanically imperfect fillings, inadequately filled root canals, and pulpitis due to poor choice of filling materials. If amalgam is not properly

consolidated and well packed into a prepared cavity, or if a heavy enough cement base was not prepared beneath the amalgam, changes in pressure may cause irritation of the underlying, sensitive, normal tooth structure.

In this type of difficulty, replacement of the faulty filling with properly inserted amalgam over an adequate cement base will almost invariably eliminate recurrence of symptoms. It is not advisable, however, to replace all amalgam fillings which appear to be the source of trouble at high altitude. A filling deep enough to break into the pulp chamber and initiate certain tissue changes may cause symptoms during flight for a period of weeks following its insertion. As the tissue changes stabilize, however, symptoms will no longer occur. Therefore, in the case of a recently inserted filling, it is usually advisable to delay treatment by replacement for several weeks, at the end of which time such treatment no longer may be necessary. In this connection, zinc oxide eugenol as a base material under deep fillings has proven most satisfactory in preventing pain at high altitude.

Untreated caries, especially under old restorations, and in which the pulp has become exposed, also may be the cause of toothache at high altitude. Broad consideration of such cases suggests a division of these reactions into two categories: (1) pain caused by the reaction of vital pulps of carious teeth to the change in atmospheric pressure, and (2) pain caused by the reaction of degenerated gangrenous pulps to the change in atmospheric pressure. Proper dental treatment of these latter cases depends on the individual case; removal of the degenerated pulp, rather than extraction, often is adequate.

A less frequent cause of toothache occurring during ascent is the presence around the root of a tooth of a periapical abscess in which, concomitant with the infection, a small amount of gas has been generated. This gas, unable to escape, will expand with increasing altitude and may cause severe pain which can be relieved only by descent to a lower barometric pressure. Though such a tooth may present an externally normal appearance and the individual concerned may deny any previous symptoms while on the ground, X-ray examination will reveal evidence of the abscess. In one instance, which occurred in a decompression chamber, a periapical abscess ruptured at high altitude and caused subsequent infection which necessitated hospitalization.

The intense cold encountered at high altitude has been shown to bear no causative relationship to aerodontalgia. The lips, tongue, cheeks and saliva, in addition to the oxygen mask, apparently offer an adequate protective barrier against the cold air.

If toothache comes on during ascent or while at peak altitude, the only immediate treatment possible is descent; if it occurs during descent, re-ascent will alleviate symptoms. All flying personnel who suffer from toothache at

change of altitude should be referred without delay to a dental officer for investigation and treatment.

In the event that examination following toothache at high altitude fails to reveal dental abnormalities, aerosinusitis with referred pain should be borne in mind as a possible cause for aerodontalgia. (Physiol. of Flight, March 15, '45)

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For other information on dental pain at high altitude see the Bumed News Letter of November 24, 1944.

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Present Status of Chemotherapy in Tuberculosis: Several drugs of the sulfone series have demonstrated a striking ability to arrest tuberculosis induced experimentally in guinea pigs. The tubercle bacillus must be added to the long list of organisms which are amenable, at least to some extent, to the chemotherapeutic approach. Three substances, promin, diasone and promizole, have been subjected to clinical trials with mildy encouraging, but not conclusive, results. Promizole has the distinct advantage of low toxicity for man, but its clinical efficacy has not been adequately demonstrated at this time.

It now appears certain that none of the drugs available for chemotherapy of tuberculosis has any clinical therapeutic effect comparable to the prompt and striking results commonly observed when the sulfonamide drugs and penicillin are utilized in the treatment of certain acute diseases. It is not known whether the less striking results with tuberculosis are due (1) to peculiarities of the tubercle bacillus, (2) to the unusual tissue responses in tuberculosis, or (3), more probably, to the limited chemotherapeutic properties of drugs studied thus far.

Appraisal of chemotherapy in clinical tuberculosis must await the performance of adequately controlled clinical studies or the development of a remedy so powerful that results are immediately obvious. If a chemotherapeutic agent of practical application becomes available, its existence should be announced to the medical profession through proper professional channels. In the meantime, physicians should advise their patients to accept conventional forms of treatment, especially sanatorium care and collapse therapy, the value of which has been well established. (Ann. Int. Med., May '45 - Hinshaw et al)

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Blood Grouping Globulin and Blood Grouping Serum: Due to changes in the plasma fractionation program of the Navy, the preparation of Blood Grouping Globulin (Human) Dried, Stock Nos. S1-817 and S1-818, is being discontinued. As stocks of this globulin are exhausted, they will be replaced by Blood Grouping Serum (Human) Dried, Stock Nos. S1-821 and S1-822. This is lyophilized, high-titer, high-avidity serum packaged in the same way as the globulin, with 2 cc. of diluent for each bottle of dried serum. Both have a high avidity for subgroups and are quite stable at room temperatures in the dried state. Once reconstituted they should be refrigerated until expended. Both globulin and serum can be used interchangeably for blood grouping. (Nav. Med. School, Bethesda, Md. - S. T. Gibson)

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The Urea Clearance Test: The Urea Clearance Test, when correctly performed, has proved to be a very satisfactory method of determining renal function. The most important single factor to be observed in the performance of this test is accuracy in collecting the two urine specimens. Accurate recording of the time of collection of the specimens and complete emptying of the bladder each time are essential.

Creatinine determinations should be performed on both urine specimens to check the accuracy with which the specimens have been collected. The quantity of creatinine excreted, in milligrams per hour, should be approximately equal for both specimens, regardless of the volume of urine per specimen. The variation in the creatinine excretion per hour should not be greater than 30 per cent. A variation greater than 30 per cent indicates one of the following sources of error: (1) carelessness in recording the time; (2) incomplete emptying of the bladder; or (3) partial loss of the specimen. It has been found that such an error is due, in the majority of instances, to carelessness in recording the time of collection of the specimen. (Nav. Med. School, Bethesda, Md. - J. J. Engelfried)

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Qualifications for Pharmacist's Mates Entering the Submarine Service: The School for Pharmacist's Mates at the Submarine Base, New London, Connecticut, is experiencing difficulty in obtaining men properly qualified for this type of independent duty.

Medical officers charged with recommendation of Pharmacist's Mates for this school must keep in mind the unique situation in the Submarine Service. The Pharmacist's Mate is the sole representative of the Medical Department aboard a submarine. Operations necessitate long periods at sea under conditions which preclude a medical consultation. The Pharmacist's Mate of a

submarine has an important role in maintaining the morale as well as the health of the crew. Good judgment and emotional stability are essential.

In order to meet the exacting demands of this type of independent duty, the Pharmacist's Mate must be highly motivated, emotionally stable, intelligent and competent. A highly valuable prerequisite is previous independent duty, or, in lieu of this, the special training for independent duty at Portsmouth, Virginia.

Selected volunteers for Submarine Duty are subjected to an intensive screening at New London. Candidates receive a comprehensive physical examination, an oral and written professional examination and a psychiatric interview. Poor selection of candidates for duty in this field is responsible for an unnecessarily high rate of attrition among candidates at New London. Medical officers are largely responsible for this waste of time, transportation and money. (U. S. Submarine Base, New London, Conn. - C. W. Shilling)

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Manual on Insecticides and Repellents: Attention is invited to Malaria and Epidemic Disease Control Bulletin #2, published by CincPac and CincPoa. This is a restricted manual entitled, "Basic Data for Military Usage of DDT, Repellents, and Other Chemicals for Insect Control". It is based upon field experiences in the Pacific. Distribution will be limited to one copy to each medical officer or sanitation officer upon request. The Bureau of Medicine and Surgery has no copies for distribution at this time. Requests for this Bulletin should be submitted to the Headquarters of the Commander in Chief, United States Pacific Fleet and Pacific Ocean Areas, c/o Fleet Post Office, San Francisco, California. (Prev. Med. Div., BuMed - H. P. Hopkins)

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Insect Control: Studies to determine means of destroying fly larvae in latrines and in animal carcasses indicate that ortho-dichlorobenzene is an effective larvicide. Para-dichlorobenzene was found to control larvae in pits containing artificial breeding media. DDT was ineffective as a larvicide but destroyed a high percentage of the adult houseflies. (OSRD M-4331 - Annand et al, U. S. Dept. of Agriculture - CMR Bulletin #42)

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Misconduct: Venereal Disease under Public Law 439, 78th Congress: "The Act of September 27, 1944, specifically provides that venereal disease shall not be presumed to be due to willful misconduct if the person in service complies with the Army or Navy regulations requiring him to report and

receive treatment for such disease. Therefore, the only time venereal disease can be considered to be due to misconduct is when a person fails to report for treatment in accordance with any regulations that may exist concerning venereal disease. The misconduct, therefore, is not the acquisition of the venereal disease but the failure to report and receive treatment for it after a person knows he has the disease. This situation, of course, cannot apply to a person who had the disease prior to entry into service unless, if he again breaks out with it after entry, he fails to report it and receive treatment if so required by regulations.

The reasonable rule with respect to venereal disease is to hold misconduct only in those cases where a person who knows he is suffering with such a disease fails to report it and receive treatment while in the military service, whether or not the act that brought it about occurred prior or subsequent to entry into service. When a person is to be discharged because of physical disability which is a sequel of a venereal disease, the inquiry should be restricted to whether, while in the naval service, the person knowingly suffered with the venereal disease, of which the sequel is to result in his discharge, and failed to comply with any then existing regulations requiring him to report and receive treatment for the disease."(Quoted from Judge Advocate General Decision - File: JAG:II: AVDS:ac, 25 Jan 1945)

"Venereal disease is not to be considered to have been incurred through misconduct unless the person involved has failed to comply with the existing Navy regulations requiring him to report and receive treatment for such disease. Prophylaxis is not involved. If the person reports for treatment and then refuses to submit to the prescribed treatment, such refusal would result in a holding of misconduct. Time lost from regular duties in excess of one day on account of venereal disease should be made good if the person fails to comply with the existing Navy regulations requiring him to report and receive treatment for such disease.

Whenever it becomes essential for the Navy Department to determine line of duty in cases of disability resulting from venereal disease, such disability should be held to have been incurred in line of duty, if contracted while in active military or naval service and not as the result of his own misconduct, provided the disease was not contracted while a deserter, absence without leave materially interfering with the performance of duties, or confined under sentence of a court martial or civil court."(Quoted from Judge Advocate General Decision - File: JAG:II: AVDS:ac, 26 Jan 1945)

"Revised General Orders will be issued to supersede General Orders No. 14, 20 and 97."(Med. Records Div., BuMed - B. E. Irwin)

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Processing Dental X-Ray Film under Tropical Conditions: When it is necessary to process dental X-ray film at temperatures above 75° F., certain changes in technic are recommended in order to prevent the emulsion from washing off the film base because of softening.

The addition of sodium sulfate, Supply Catalog 1-825, to the reagents ordinarily employed is a useful procedure in processing film at high temperatures. The following table indicates the amount of sodium sulfate to be used:

Temperature F.	78° - 80°	90°	100°	110°
Sodium Sulfate to be added to developer, Grams per gallon	200	300	600	800
Developing time, minutes	3 to 4	3	2	1
Time in fixing bath, minutes	10	5 to 10	5 to 10	5 to 10
Washing time in running water, minutes	15	15	15	15

At 110° F., the developing solution contains so much sodium sulfate that crystallization will occur if the temperature is allowed to drop even 5 or 10 degrees. If this occurs, restoration of the bath to 110° F. will redissolve the crystals.

If possible, it is advisable for dental units proceeding to tropical zones, outside of the continental limits, to take a supply of sodium sulfate sufficient to meet their needs until replenishments may be had.

Another recommended change in technic is to use only one-half the amount of water designated in the instructions that accompany the powders when mixing the solution for the acid-fixing bath which is to be used at temperatures higher than 78° F.

When processing film at high temperatures without a separate hardening bath, the film should not be rinsed in water but should be taken from the developing solution and immediately placed in the fixing solution. It should then be agitated in the fixing solution long enough for the developing solution retained by the film to diffuse in the fixing solution. Inasmuch as the films are not rinsed, a considerable quantity of developing solution is carried over to the fixing bath. Therefore, it is important that the fixing bath be renewed much more frequently than is usual.

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Storage of Dental X-Ray Film: X-ray film will deteriorate during storage if exposed to heat, humidity, X-radiation or chemical fumes. These factors must be considered when choosing storage space for surplus films.

The effect of high temperatures is especially difficult to overcome. It is therefore advisable to keep film stocks under refrigeration to prevent fogging. Before placing in the refrigerator, to protect films from moisture, wrap each package of film in wax paper and seal all the edges with either scotch tape or adhesive tape. This should be done to packages of periapical, occlusal and extra-oral films. Before using, it is important that the film be removed from the refrigerator so that it may remain at room temperature at least overnight before opening the package. This will prevent the condensation of moisture on the film emulsion.

It is important that the refrigerator used for storage does not stand near the X-ray apparatus where it is exposed to primary X-radiation. If this is unavoidable, a lead shield should be placed either within or outside the refrigerator so that it protects the film from the primary rays. Since refrigerators are made of metal, there should be no trouble from secondary radiation.

X-ray film should not be stored with chemicals, the fumes from which may damage the films. In this respect, formalin, hydrogen sulfide and hydrogen peroxide are especially injurious. (U. S. Nav. Train. Center, Sampson, N. Y. - A. P. S. Sweet)

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Erratum: The Alnav appearing at the top of Page 30 of the May 25, 1945, issue of the Bumed News Letter should be numbered 77 rather than 413. This Alnav is referred to in Alnav 86, appearing on Page 32 of the June 8 issue.

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ALNAV 97 BuPers. 16 May 1945

Subj: Status of Public Health Service Officers.

Reports received indicate responsible naval personnel not uniformly cognizant of status of Public Health Service officers detailed for duty with the Coast Guard and of their right to be treated as naval rather than civilian personnel. Public Health Service officers detailed for duty with the Coast Guard constitute a part of the naval forces, are military personnel while so serving, and are to be treated as such in respect of privileges and discipline. Corrective action will be taken by commanding officers of all activities having contact with such Public Health Service officers so as to insure proper treatment of such personnel. --SecNav. Ralph A. Bard.

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To: All Ships and Stations. Op-23-2-MM
Serial 211523
28 May 1945

Subj: Water, Ship-to-Shore Connections.

1. A great number of cases have been reported where fire and flushing systems aboard naval vessels have been connected to the potable-water system ashore without the use of backflow prevention devices, and subsequent inadvertent operation of the ships' pumps, with relatively high pressures involved as compared to the normally lower pressure ashore systems, for testing, fire fighting, flushing decks, or other purposes has resulted in pumping of polluted water into the drinking-water system ashore. Such contamination of the shore drinking-water system endangers the health of personnel both ashore and afloat, since the polluted water frequently is taken aboard into fresh-water systems of ships docked near the point of contamination. At locations where a municipal water-supply system is involved, the establishment of an open cross connection with a polluted source of supply such as ships' fire and flushing systems constitutes a direct violation of State laws, municipal or water departments' ordinances or regulations.

2. Therefore, except under extreme emergency conditions where safety of a vessel from fire or explosion may be at stake, all connections between potable-water supply systems ashore and nonpotable systems aboard vessels belonging to the United States Navy are hereby prohibited, unless the shore system is protected at each potable outlet by a backflow prevention device as prescribed by Circular of Information, Water Supply and Sanitation, Navdocks P-147, sections 1-20 and 1-21. Shore stations are enjoined to provide the prescribed protection for their potable-water systems as soon as possible.

3. While the use of backflow prevention devices is considered a reasonably reliable means of preventing contamination of potable-water systems, sole

reliance should not be placed on use of such devices. Accordingly, except for emergency purposes, the additional precaution shall be adopted of making connection to a potable-water supply for ships' service water only as absolutely necessary and only after every effort has been made to maintain at all times the necessary pressure and volume of fire and flushing water by use of regularly operated ships' pumps, by ships' emergency Diesel-operated pumps, or by connection to a separate nonpotable system ashore, where such a separate system is available. In the event backflow prevention devices are not available or installed at potable-water supply outlets, and the above prescribed means of maintaining ships' fire-system water are not in hand, action shall be anticipated and taken by shore stations to supply the necessary fire and flushing water by use of portable trailer fire-fighting pumps taking suction from the harbor, by obtaining supply from an auxiliary or nearby vessel whose pumps are in operation, or by supplying power for operation of the ships' pumps.

4. It is permissible at any time to carry aboard fire-fighting hose lines attached to a potable-water system ashore provided these lines are used or equipped to be used as direct hose streams, or for attachment to portable foam generators.

5. At locations where separate potable and nonpotable systems exist, extreme caution should be exercised to avoid taking supply from the nonpotable system to the ships' fresh-water tanks. The separate systems should be painted identifying colors. Liberal use should be made of stenciled labels on pipes, appropriate warning signs, or metal tags suitably fastened to indicate or identify at each outlet the kind of water available at the particular outlet. All water connections between shore and ships should be made by shore-station personnel.

6. Ships and stations shall immediately take applicable action to effect the above requirements. --OpNav. F. J. Horne.

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To: All Ships and Stations. BuMed-Y-vh A3-3/EN10(F)

Subj: NavMed Fa (Individual Statistical Report of Patients), Mutilation of and Substitution for. 15 May 1945

1. The present NavMed Fa was designed as a statistical punch-card form in order to facilitate mechanical tabulating and expedite preparation of final reports in BuMed. Folding, stapling, mutilation of the edges, or the use of paper clips, renders the individual cards useless for machine processing. Every report submitted to the Bureau which is mutilated, or which is prepared on a substitute form, requires copying on a regular form. It is

requested that activities refrain from mutilating, damaging, or otherwise mishandling NavMed Form Fa in its preparation or forwarding.

2. It is requested that the substitution of paper or other type of copy of NavMed Fa for the regular form be discontinued. There are ample supplies of NavMed Fa in all medical supply depots and storehouses. Activities are urged to maintain a close check and to requisition new stock of subject form before the current supply becomes exhausted. --BuMed. Ross T. McIntire.

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To: All Ships and Stations. BuMed-Y-vh A3-3/EN10(F)

Subj: NavMed F (Individual Statistical Report of Patient), Delays in Transmittal of. 17 May 1945

1. There is developing an increasing trend in the field toward delay in the prompt preparation and transmittal of the subject form. This delay has reached a serious proportion to the extent that, on a recent date, approximately 2,000 NavMed F cards were received in the Bureau covering months of admission to the sick list from July 1944 to January 1945. Such a prolonged delay interferes very seriously with the value of medical statistics, as planning and organizing for future operations depends entirely on promptness in reporting.

2. Since the first of this year, due to the fact NavMed monthly form F was discontinued, NavMed F cards constitute the sole source of information available in the Bureau relative to admissions to the sick list for naval personnel whose health records have been lost or destroyed.

3. All activities must complete subject forms in accordance with existing instructions, and transmit them in the most expeditious manner possible to the Bureau. --BuMed. Ross T. McIntire.

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To: All Ships and Stations. BuMed-T FS/L1-2

Subj: Medical Stores, Small Craft - Procurement of. 24 May 1945

Ref: (a) BuMed ltr T-L8-2(072) of 15 Apr 1945; N. D. Bul. of 15 Apr 1945, 45-364.

1. Certain types of small vessels rarely require medical stores other than replenishments for their commissioning outfits. District craft not furnished

commissioning outfits require only small quantities of first-aid material. It is intended that small craft will be furnished medical treatment and medical stores by the activity to which regularly or temporarily assigned for operations.

2. During periods in transit or on detached service small craft may obtain necessary medical stores from any naval Medical Department activity in the following order of preference: (1) Shore stations or bases regularly supplying similar vessels; (2) any shore station or base; (3) any naval medical supply depot or storehouse; (4) other ships. Small-craft requests for medical stores shall state whether or not a Medical Department representative is attached. Activities receiving such requests are authorized to issue essential medical stores as may be so requested. Shore activities located at ports where such vessels frequently call shall be prepared to render this service.

3. Request for medical stores submitted to medical supply depots and storehouses shall be prepared on NavMed Form 4 in accordance with instructions contained in reference (a). Requests submitted to other activities may be prepared in letter form and will be handled on a transfer basis.

--BuMed. Ross T. McIntire.

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To: All Ships and Stations. S64-2(660j)
EN28/A2-11

Subj: Lighting System, Fixture for Hospital Space Berth. 29 May 1945

Refs: (a) BuShips ltr S64-1(660c), EN28/A2-11, of 27 Jan 1945.
(b) BuShips std. plan No. 9-S-2940-L, Alt. 16, Bedside Portable Fixture, Type I, Stock No. 17F5875.
(c) BuShips std. plan No. 9000-S6401-73251, Alt. 2, Berth Fixture (Adjustable), Types K, K1, K2, K3, K4.

1. It has been the practice to provide at berths in hospital spaces of U. S. Naval vessels a portable fixture conforming to reference (b) for use either as a patient's reading light or as an examining light. A permanently mounted berth fixture shown on reference (c), and superseding reference (b) as a patient's reading light, has been recently developed at the request of the Bureau of Medicine and Surgery. Reference (a) informed navy and private building yards of the foregoing and authorized the installation of fixture, reference (c), in place of reference (b) in ships under construction. Furthermore, reference (a) authorized for ships in commission the installation of fixture, reference (c), at hospital space berths where no berth fixture is now installed or where replacement of fixture, reference (b) is required.

2. When requisitions are submitted as authorized in the above paragraph, the appropriate type of fixture should be specified in accordance with the following list:

brought before a board of medical survey for evaluation of their physical condition and recommendation as to disposition in accordance with the provisions of references (e) and (f). Officer personnel who are not physically qualified for full duty must be brought before a board of medical survey (reference - Par. 3423(d)(5), MMD). The foregoing requirements for medical survey will not affect current procedure for transfer of personnel to U. S. Marine Barracks, Klamath Falls, Oregon, in a full-duty status, as provided in reference (g).

4. All enlisted personnel who are on limited duty because of malaria or filariasis shall be reexamined semiannually (March and September) in accordance with the provisions of reference (h). Furthermore, any officer or enlisted man in a limited-duty status because of malaria or filariasis may, upon his own request, be examined at any time to determine his physical fitness for reclassification as physically qualified for full duty as follows:

(a) In the cases of enlisted personnel in whom there has been no incapacitating disability attributed to malaria or filariasis for three or more months and in whom there is no clinical activity or disability at the time of examination, and the individual is considered physically qualified for all the duties of his rating, an entry shall be made in the Health Record (NavMed Form H-8) in duplicate as follows: "(Name and rate) has been examined this date and shows no evidence of clinical activity or disabling disability of malaria or filariasis, has been free of incapacitating symptoms for three or more months, and is declared physically fit for full duty in conformity with joint letter BuMed-BuPers-MarCorps, BuMed-WM-AMH, P2-3/P3-1; BuPers-2-LD, P16-3/MM; MarCorps 1515-110, of 28 May 1945."

(1) In the cases of naval enlisted personnel, a duplicate of the entry on NavMed Form H-8 shall be forwarded to BuMed. An appropriate similar entry shall be made on page 9 of the man's Service Record citing this letter as authority, and the duplicate copy of the Service Record entry shall be forwarded to BuPers. The commanding officer of the man concerned shall be notified of this action, and the man shall be transferred to the nearest receiving ship or receiving station for general detail. The provisions of paragraph 8 of reference (h) are modified accordingly.

(2) In the cases of Marine Corps enlisted personnel, a duplicate of the NavMed Form H-8 entry shall likewise be forwarded to BuMed. An appropriate similar entry shall be made on the last page of the man's Service Record citing this letter as authority, and a duplicate copy of the Service Record entry shall be forwarded to Headquarters, U. S. Marine Corps. The commanding officer of the man concerned shall be notified of the action taken.

(b) Officer personnel who have been on limited duty and are thus found physically qualified for return to a full-duty status must be brought before a board of medical survey (reference - 3423(d)(5),MMD). In the case of naval aviators the report of the board of medical survey shall be accompanied by a report of physical examination for flying (NavMed Form 1), in accordance with existing directives.

5. Personnel with a history of malaria or filariasis, but in a full-duty status, may be assigned duty in any endemic or nonendemic area of malaria or filariasis (continental or overseas).

6. Personnel in the United States who develop frequent and/or severe malarial attacks may be placed on routine suppressive malarial treatment if, in the opinion of the medical officer concerned, these attacks seriously interfere with the performance of assigned duties. Suppression when used should be administered for 4-6 months and may be continued or resumed if deemed necessary to keep individuals in an effective duty status or to facilitate their return to a full-duty status. Suppressive treatment shall consist of 0.1 gm. atabrine dihydrochloride daily, or 10 grains quinine (sulfate or hydrochloride) daily in rare cases of absolute intolerance or sensitivity to atabrine dihydrochloride. Administration must be regular to be effective. --BuPers. Randall Jacobs. --MarCorps. A. A. Vandegrift. --BuMed. Ross T. McIntire.

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To: All Ships and Stations. Pers-53503-rld
L13-2
25 May 1945

Subj: Government Life Insurance, Medical Examinations.

Refs: (a) World War Veterans' Act of 1924, as amended.
(b) National Service Life Insurance Act of 1940, as amended.
(c) BuPers-BuSandA joint ltr 44-765, with enc. thereto; AS&SL Jan-Jun 44, p. 774.

1. It is the desire of the Secretary of the Navy that each man in the service be encouraged to take out the maximum amount of Government Life Insurance.

2. Under references (a) and (b) it is usually necessary for a naval medical officer to aid in the completion of an insurance application. All applicants who are eligible for U.S. Government Life Insurance, and applicants for National Service Life Insurance who do not apply for such insurance within 120 days following date of entry into active service (except where certification by the commanding officer may be accepted in lieu of a medical examination, as provided in paragraph 9(b) of enclosure to reference (c)), must be examined by a medical officer. Such examinations should not be delayed because of the unavailability of the health record.

3. The duty of the medical officer is fulfilled when his findings have been entered on the application over his signature. Determination of insurability in every instance is a function of the Veterans' Administration.

4. Under present wartime conditions the exigencies of the service are such that it may not always be expedient for a naval medical officer to conduct physical examinations for insurance purposes at the convenience of the individual concerned. It is believed, however, that some practical arrangement should be made whereby such examinations can be conducted without undue delay.

5. The purpose of this letter is to clarify the function of the naval medical officer and to emphasize his responsibility in affording full cooperation to personnel who require an examination for insurance purposes.
--BuMed. Ross T. McIntire. --BuPers. Randall Jacobs.

To: All Ships and Stations.

BuMed-Fa-HFM:hwl
L1-1-1945/EN(101)
5 Jun 1945

Subj: Medical Department Allotments, Utilization and Modification of.

Refs: (a) BuMed ltr, BuMed-Fa-HFM:mlt, L1-1-1945/EN(101), of 23 Aug 1944.
(b) Par 3022(e), (f), (g), and (h), Manual of the Medical Dept.
(c) BuMed ltr, BuMed-EP-AFM, LL/EN10(111), of 1 May 1945 (NMSDs, NavHosps, and ConvHosps only).

1. Effective 1 July 1945 reference (a) is canceled and superseded by this directive.

2. The policy of this Bureau is to allow field activities maximum flexibility in budget operations because of the decentralized nature of Medical Department fiscal operations and the peculiar requirements of the Medical Department. However, the limited funds available to this Bureau for allocation to the field activities during the fiscal year 1946 require that certain limitations be placed upon the utilization of funds allotted under certain subobjects (subheads). These limitations will not interfere with the providing of all necessary materials and services, since funds to meet all essential and adequately justified requirements may be obtained through the prescribed procedure for requesting increases in allotments.

3. Funds allotted under the appropriation "Medical Department, Navy," may be utilized to meet current operating requirements within the limitations of the respective quarterly apportionments and without regard to the subobjects (subheads) under which granted, subject to the following exceptions:

(a) Funds allotted for (1) salaries and wages, or (2) provisions shall not be utilized for any other purpose, nor shall funds allotted for (3) any other purpose be used for either of the first two purposes without specific authorization of the Bureau. Overobligations in any of these three categories shall not be incurred in advance of Bureau approval, except as authorized in paragraph 5(f) of this letter.

(b) The funds allotted for salaries and wages may be utilized interchangeably to the extent of the total unobligated and uncommitted balance available for both purposes, and subject to the limitations of reference (c).

4. An official request for increase in allotment is required to obtain additional funds for salaries, wages, and provisions. Request for increase in allotment is required to obtain additional funds for other purposes only when the total quarterly apportionment (less funds allotted for salaries, wages, and provisions) is not sufficient to cover requirements of the respective fiscal quarter.

5. Modification of allotments.

(a) Requests for modification of allotments shall be submitted to the Bureau when circumstances require that additional funds be provided or that quarterly apportionments be modified. Such requests shall be submitted as soon as may be practicable after the need therefor becomes apparent in order that the Bureau may be fully apprised of current operating requirements and may take the necessary action to make the required funds available.

(b) Requests for modification of allotment shall, except in cases of immediate urgency, be submitted by letter in the following form, preceded by a statement of the specific circumstances necessitating the modification:

	(State which quarter)
1. Allotment No. _____	
2. Expenditures to date	$_____
3. Unliquidated obligations this date	$_____
4. Amount required balance of period	$_____
5. Total amount required	$_____
6. Amount available	$_____
7. Increase (or decrease) required	$_____
8. Object and subhead allocation of increase (or decrease) (list each object and subhead under which revision is required and amount applicable to each.)	
9. Total by object and subhead classification (must agree with line 7.)	$_____

(c) A summary statement containing complete and adequate justification by items, or by classes of items and estimated cost, is required under each subobject in each request for increase in allotment.

(d) When more than one quarter of the fiscal year is involved in the requested modification a separate money-value column shall be used for each quarter and the applicable quarter shall be identified in the heading of each column.

(e) In case of urgent necessity, dispatch, mailgram, or naval speedletter request for modification of allotment may be submitted in the following form, but shall, in each case, be followed by a confirmatory letter in the form outlined in subparagraph (d) above:

xxxx Request allotment number (_____)
be increased (state amount) (_____)
quarter fiscal year (_____)
Increase required due to
(state briefly circumstances requiring change)

(f) In case of emergency in which the delay incident to obtaining Bureau approval in advance of incurring obligations would endanger life or Government property, the commandant or senior officer present may authorize work to be begun or purchases made in advance of Bureau approval. In every such case the procedures prescribed in subparagraphs (d) and (e) above shall be complied with at the earliest practicable moment. Reference shall be made in requests for increase in allotment to the specific authorization granted to obligate funds in advance of Bureau approval.

6. Allotment control accounts shall not be adjusted to reflect local changes in apportionment of funds as between subobjects. Changes in apportionment shall be recorded in the individual allotment accounts only upon receipt of Bureau-approved modifications in allotments. This procedure will require the minimum in clerical operations and will reflect fiscal operations in such manner they may be readily compared with the fiscal estimates for the same period to provide information with respect to need for revision of current allotments and for use in future estimating.

7. This directive is not presently applicable to ships or to stations operating under advance-base accounting and Alnav 77 of 11 April 1944.

8. Reference (b) is in process of revision to conform to this letter.

--BuMed. Ross T. McIntire.